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UNIVERSITY OF ILLINOIS.

CLARK UNIVERSITY,

WORCESTER, MASS.

Opening Exercises.

OCT. 2, 1889.

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UNIVERSITY OF ILLINOIS.

CLARK UNIVERSITY.

OPENING EXERCISES.

In accordance with a vote of the Trustees, the dedicatory and opening exercises of Clark University were held on Wednesday, October 2d, at three o'clock in the afternoon, in the large hall of the University. The Trustees had invited

THE CITY OFFICIALS,

CLERGYMEN OF ALL DENOMINATIONS,

MEMBERS OF THE PRESS, BAR AND MEDICAL PROFESSIONS,

ALL CONNECTED WITH EDUCATIONAL INSTITUTIONS,

ALL FRIENDS OF THE UNIVERSITY.

An audience of fifteen hundred ^{1200 seats and} filled the available standing room and many could not gain entrance to the hall. Seats were provided upon the platform for the trustees and instructors.

GENERAL CHARLES DEVENS presided, and on taking the chair spoke as follows :

Ladies and Gentlemen :

On behalf of the Founder and of the Corporate Board of Trustees into whose hands he has confided

his munificent gift, I cordially welcome all present to the simple ceremony by which we propose to mark the commencement of the work of this university. I especially welcome the Mayor of the city, the principals of its educational and literary institutions and their associates, the clergy and all those whom we have invited to meet us on this interesting occasion. While we have not extended our invitations outside of the limits of the city to many friends of science and education whose appreciation and encouragement we highly value, it is because our present state of preparation, although sufficient to justify us in commencing the work in those departments of science which we have announced for instruction, is less complete than we could desire, although in matters of detail rather than in those of substance. Whether there shall be at some later period a more formal opening or dedication, will be a matter hereafter to be considered.

Two years since, in this month of October, we assembled to lay the corner-stone of the edifice in which we are gathered to-day. While most of us have been permitted again to unite to-day, it is impossible to forget that of the original Board of Trustees then present, one of the number has passed away, and I linger for a moment to recall a gentleman so modest, so learned, so wise, that he inspired alike love and respect among all classes and conditions of men; a scholar, who in the toils of an arduous profession, never forgot his love of learning, a physician justly reckoned in this Commonwealth among its masters of medical science, and yet, broad and generous as even the boundaries of that science, who never limited his knowledge or his studies to it. I need not in this presence say that

I allude to the late Dr. Joseph Sargent. His loss was a public one, to the community in which he dwelt, to the State of which he was a citizen, to the charitable and educational institutions with which he was connected, in which we as his associates were compelled to bear our share.

The edifice of which we then laid the corner-stone and the laboratory which supplements it are completed and furnished—intended for the purposes of investigation and instruction, its library halls and rooms for recitations will be seen to be commodious and convenient. The solidity and thoroughness which characterizes these external structures will, we hope, in a greater degree mark the education offered and the studies pursued here.

It has been determined after full discussion to commence our courses of instruction in five different departments of science only, instead of at once undertaking all those with which we hope and confidently expect hereafter to deal, and to proceed further only as we shall be satisfied that we have reached, in what we have undertaken, the fullest proficiency.

For these departments an ample corps of professors and instructors (whose competency we cannot doubt) has been provided, whom I cordially welcome on behalf of the Founder and Trustees, and whom I know will also be welcomed by the scholars and educators and by all the citizens of this prosperous and hospitable city. In apportioning their labors we have sought that they should not be so incumbered by the work of the immediate instruction of pupils that they shall in any important degree be deprived of the opportunity of pursuing themselves those scientific investigations

which the whole community may properly look for and expect from a university.

Some time since we invited Prof. G. Stanley Hall, of Johns Hopkins University, to aid us in the organization and preparation of our University and to become its first President. It might be indelicate in his presence to say how warmly our choice has been approved by most eminent scholars and scientists, perhaps even to say how much we feel that we have cause to felicitate ourselves that we have been able to secure his services, but it is not indelicate to assure him, as we reach this important era, on behalf of the Founder and the Trustees, of the respect and esteem in which, after an intercourse of more than a year and a half, we hold him, and of our entire confidence in his judgment and ability.

President Hall will in his address say something of his scheme for the University and the place which he shall desire to have it fill among the educational institutions of the country.

The moment of commencing a great enterprise, if one of hope, is one of anxiety also. Of those to whom much is given much is rightfully required. We have received from the Founder of the University a most generous gift, the good effect of which, if wisely used, will be felt long after the grass grows green above each one of us. It has been supplemented by those provisions made by himself and his estimable and honored wife, which, by means of fellowships, open the gates of the University to those of narrow means. In all that has been done it has been the wish of the Trustees to keep themselves in communication with the best thought, the noblest feeling, the highest aspirations of the age in which we live. Nor can we

speech words to-day more appropriate than those used by the Founder at the laying of the corner stone, worthy as they are, to be renewed again and again at every advancing step of the University,—“We therefore here and now dedicate this university to science, letters, art and human progress ; and may the giver of all good crown its efforts and labors with his constant and abundant blessing.”

At the close of his remarks, Judge Devens called upon the REVEREND CALVIN STEBBINS to offer prayer.

MR. JONAS G. CLARK, the Founder of the University, then made the following address :

The occasion which calls us together to-day marks a decided as well as an original step in our undertaking. Scarcely more than thirty months ago we formally entered upon our work by accepting the charter granted by the Legislature of the Commonwealth, and by completing our organization under its several provisions. During this time we have made perhaps as rapid progress as could reasonably have been expected when we take into consideration the greatness of the work and the almost infinite variety of detail involved in its execution.

In the progress of our labors we have met with as few obstacles as could have been anticipated, and we present to-day, as the result of those labors, the main building of the University fully completed and ready for occupancy, and a building for a Labora-

tory far enough advanced to answer all our present requirements. Both buildings are receiving the necessary equipments and furniture to render them available for practical use.

In our announcement of May 23rd, we proposed to open on October 2nd for the commencement of actual work. For this purpose we are now here assembled. When we first entered upon our work it was with a well defined plan and purpose, in which plan and purpose we have steadily persevered, turning neither to the right nor to the left. We have wrought upon no vague conceptions nor suffered ourselves to be borne upon the fluctuating and unstable current of public opinion or public suggestions. We started upon our career with the determinate view of giving to the public all the benefits and advantages of a university, comprehending full well what that implies, and feeling the full force of the general understanding that a university must, to a large degree, be a creation of time and experience. We have, however, boldly assumed as the foundation of our institution the principles, the tests and the responsibilities of universities as they are everywhere recognized—but without making any claim for the prestige or flavor which age imparts to all things. It has therefore been our purpose to lay our foundation broad and strong and deep. In this we must necessarily lack the simple element of years. We have what we believe to be more valuable—the vast storehouse of the knowledge and learning which have been accumulating for the centuries that have gone before us, availing ourselves of the privilege of drawing from this source, open to all alike. We propose to go on to further and higher achievements. We propose to put into the hands of

those who are members of the University, engaged in its several departments, every facility which money can command—to the extent of our ability—in the way of apparatus and appliances that can in any way promote our object in this direction. To our present departments we propose to add others from time to time, as our means shall warrant and the exigencies of the University shall seem to demand, always taking those first whose domain lies nearest to those already established, until the full scope and purpose of the University shall have been accomplished.

These benefits and advantages thus briefly outlined, we propose placing at the service of those who from time to time seek, in good faith and honesty of purpose, to pursue the study of science in its purity ; and to engage in scientific research and investigation—to such they are offered as far as possible free from all trammels and hindrances, without any religious, political or social tests. All that will be required of any applicant will be evidence, disclosed by examinations or otherwise, that his attainments are such as to qualify him for the position which he seeks.

In the government of the University it is our aim and fixed purpose that nothing like favoritism in any form shall be allowed ; that everything approaching religious, political or social bias shall be excluded, and in nothing can the friends of the University more fervently unite than in the prayer that in all times hereafter everything connected with its administration or the ordering of its internal arrangements, and in dispensing its advantages or bestowing its favors—either in the selection of officers or in the admission of applicants for place—shall be kept free from this baleful influence. Experience on every hand teaches

us that the moment these influences gain a hold in the councils of a university the effectiveness of its work will be seriously impaired and its influence for good weakened or altogether gone.

The Board of Trustees extend to the gentlemen who constitute the Faculty, and in whose hands have been committed the educational labors of the University, a sincere welcome to our city. Their presence with us will be an additional attraction to Worcester as a place of residence, and will constitute a new and strong claim for it to be regarded as one of the educational centres of our country.

Personally, I avail myself of this occasion to extend to my associates on the Board of Trustees my sincere and grateful thanks for the earnest co-operation which they have shown in the progress of our initiatory work ; for the zeal they have constantly manifested in the execution of the trust which they have accepted, for the unwearied labor which they have ever given and for their willingness to bestow their best care upon the work which we have had in hand, that it might be crowned with abundant success.

It is fitting, in conclusion, that I should allude to the great loss we have sustained by the death of one of the original members of our Board—a loss that can scarcely be estimated by those unacquainted with the labors, the duties and the responsibilities which fall upon one who occupied his position. Those labors and duties were always discharged by him with the most scrupulous exactness and with a care which could not have been excelled in the management of his private affairs. But it was not alone upon the University that the great loss fell. Distinguished in various walks of life, exceptionally skilled

in the exercise of his chosen profession, he acquired and maintained through life an enviable and commanding position. He was an accomplished scholar, an upright and large-hearted gentleman. We deeply realize our loss, but feel that ours is not comparable to that of his immediate family. They have our warmest sympathies.

It now only remains for me in behalf of the Trustees to announce the University open and to welcome all those who desire to avail themselves of its benefits and advantages. We pray for the future success of the University which we now dedicate to science, letters, art and human progress in their best and highest forms. We invite the Divine aid ; and may the Giver of all good crown its efforts and labors with His constant and abundant blessing.

PRESIDENT G. STANLEY HALL then delivered the following address :

We are here to mark in a simple way, as befits its dignity, a rare event which we hope and pray may prove not only the most important in the history of this favored city, but of forever growing significance for our state and nation, for culture and humanity.

Located with great forethought in a city whose culture ensures that enlightened public sentiment so needful in maintaining the highest possible academic standards, in a city whose wealth and good will, we trust, are as fair a promise as can anywhere be given or asked of that perpetual increase of revenue now required by the rapid progress of science—in a city

central among the best colleges of the East, whose work we wish not only to supplement but to stimulate, whose higher interests we hope to serve, and whose good will and active co-operation we invite ; governed by trustees of eminence in the nation as well as in the state, who ask no sectarian and no political questions of their appointees, whose influence without and whose counsels within are of inestimable and well appreciated value ; consecrating ourselves to the toil of science at an hour so peculiarly critical and so opportune in the university development of the country, I must believe that not only every intelligent inhabitant of Worcester, but every unbiased friend of higher education everywhere, will wish to add to our already unexpectedly large endowment of public and private good will at home and abroad, his and her hearty, ungrudging and reiterated God-speed.

Just because, instead of the easy and wasteful task of repeating what is already well done about us, we strive to take the inevitable next step and to be the first, if we can, upon the higher plane ; because we must study not only to utilize all available experience wherever we can, but to be wisely bold in innovations wherever we must ; because there will be indifference and misconception from friends who do not see all the importance of our work at first ; because there are difficulties inherent in the very nature of that work itself as great as the work is needed, we must go slowly and surely, establishing but few departments at first, and when they are made the best possible, adding new and most related ones as fast as we can find the men and money to support them. We must prolong the formative period of foundation, and must each and every one realize well that we are just entering upon

years of unremitting toil, in which patience and hope will be tempered with trial. But our cause is itself an inspiration, for it is in the current of all good tendencies in higher education, and of the ultimate success of what is this day begun, there is not a shadow of doubt or of fear.

Our history begins more than twenty years ago, in the plans of a reticent and sagacious man, whose leave we cannot here await to speak of, who in affluence maintains the simple and regular mode of life inbred in the plain New England home of his boyhood ;—plans that have steadily grown with his fortune and that have been followed and encouraged with an eager and growing interest, which extended to even minor items by the devoted companion of his life. Besides a large fund already placed to our account, he has given his experience and unremitting daily care, worth to us large sums in economies, and resulting in well appointed buildings, and a solidity of materials and a thoroughness of workmanship which I believe are without a parallel of their cost and kind in the country. Not only in the multifarious work of the university office, its methods of estimates, orders, book-keeping, of individual accountability for all books, apparatus, supplies and furniture, but in the larger questions of university polity without and effective administration within, in the definition of duty for each officer, the strict subordination and the concentration of authority and responsibility sure to appeal to all who have the instinct of discipline, and which are exceptionally needful where the life of science is to be so free, and the policy so independent ; in the express exemption,

too, of all instructors who can sustain the ardor of research from excessive teaching and examination, in the appointment of assistants in a way to keep each member of the staff at his best work, and to avoid the too common and wasteful practice in American universities of letting four thousand dollar men do four hundred dollar work, in the ample equipment of each department, that no force be lost on inferior tools—in all these and many other respects the ideal of our founder has been to make everywhere an independent application of the simplest and severest but also the largest principles of business economy.

As business absorbs more and more of the talent and energy of the world, its considerations more and more prevading if not subordinating, whether for better or worse, not only the arts, the school, the press, but all departments of church and state, making peace and war, cities or deserts, so science is slowly pervading and profoundly modifying literature, philosophy, education, religion and every domain of culture. Both at their best have dangers and are severe schools of integrity. The directness, simplicity, certainty and absorption in work so characteristic of both are setting new fashions in manners, and even in morals, and bringing man into closer contact with the world as it is. Both are binding the universe together into new unities and imposing a discipline ever severer for body and mind. When their work, purified of deceit and error, is finished, the period of history we now call modern will be rounded to completeness, culture will have abandoned much useless luggage, the chasm between instruction and education will be less disastrous, and all the highest and

most sacred of human ideals will not be lost or dimmed, but will become nearer and more real.

When one who has graduated with highest honors from this rigorous school of business, after spending eight years of travel abroad studying the means by which knowledge and culture, the most precious riches of the race, are increased and transmitted, and finding no reason why our country, which so excels in business, should be content with the second best in science, devotes to its services not only his fortune at the end of his life, but also years yet full of exceptional and unabated energy, we see in such a fact not only the normal, complete, if you please, post-graduate ethical maturity of an individual business life, but also a type and promise of what wealth now seems likely to do for higher education in America. It is no marvel that our foundation has already been so often so conspicuously and so favorably noted in authoritative ways and places in an European land where, if monarchy should yield to a republic, university culture could not penetrate its people as it now does. It is thus a more typical and vital product of the national life at its best than are foundations made by state or church in which to train their servants. In thus giving his fortune to a single highest end as sagaciously and actively as he has acquired it, may our founder find a new completeness of life in age, which Cicero did not know, and taste

——“all the joy that lies
In a full self-sacrifice.”

The very word science, especially when used in its relation to business, is too often degraded by cheap graduates who are just fit to look after established

industrial processes, but are useless if competition finds or needs new and better ones ; who certify to analyses of commercial products that good chemists know are impossible ; who, if international competition in manufactures were more free, would give place to better trained, perhaps German, experts still faster than they are doing ; who, in criminal, medical and patent law suits often have the address to carry judge and jury against far better chemists, but who have no conception of the higher quality and more rigorous methods of their own science ; who make chemistry, physics and geology mercenary, culinary, the servants instead of the masters of industrial progress, and the very "life-springs of all the arts of peace or war." This evil, although so great and common that even the best men in other professions too rarely see the high ideal culture power of real science, is yet only incidental and temporary.

A good illustration of the high and normal technological value of pure science is at hand in dyeing, one of the most scientific among the many and increasing chemical industries. England furnishes nearly all the raw, formerly valueless, material for coal tar colors, out of which Germany made most of the seventeen and a half million dollars' worth manufactured in 1880. England bought back a large fraction of the colored goods, and Germany made the profits, because she could furnish the best training in pure chemistry. It is for this reason that she is driving other countries out of the field in other leading chemical industries. The great factories there employ from two or three to more than a score each of good, and often the best, university trained chemists at large salaries, and the best of these spend a good part of their time in original

research in the factory laboratories. The prospect of these lucrative careers has had very much to do in filling the chemical laboratories of the universities with hundreds of students, and the German government (best that of Prussia) has met the demand by erecting and equipping new and sometimes magnificent laboratories at nearly all of her universities. New artificial processes of making organic products of commerce have freed thousands of acres of land where they were formerly grown, and have made new industries and often impaired old ones. Many professors of chemistry make large outside incomes, nearly all are sanguine; some even declare that before very long leading drugs, and even food, that will equal if not actually excel nature's products, will be made artificially. The leading professor in one of the largest chemical laboratories of Germany told me in substance that he no longer went after outside technical work, but now made it a virtue to wait for it to seek him, and it has been strongly urged that even the government should take steps to prevent the migration of German chemists to the universities of other countries, lest Germany lose her pre-eminence in chemical industries.

This remarkable contact of the marvelous new business life and energy of Germany, particularly of North Germany, (which in both suddenness and vigor equals any of the wonderful developments in this country), with staid and tranquil academic ways, has had some marked reverberations and given new direction and impetus to other studies in some other departments where it is not directly felt. It has led to the erection and equipment by the government of great technological schools, and has shown to business men and employers that no course in the sciences

which underlie technology can be too advanced, prolonged or severe to be practical. Where ought the value and significance of such a training be better appreciated than here in the land of Fulton, Morse, Bell and Edison?

There are, however, eminent chemists in Germany, and many more in surrounding European countries, who deplore what they call the irruption of the technical spirit into the universities. They fear the proximity of the factory and the patent office to the university laboratory has narrowed the field of view and made methods of research relatively less severe, they complain that in their teaching they must hasten over inorganic chemistry, neglecting all the other elements for the carbon compounds, and that there are almost no inorganic chemists in Germany; that in choosing between several substances inviting research, one of which promises great commercial value and the other none, strict scientific impartiality is lost; that in the eagerness for practical results, problems are attempted too complex for the present methods of experimenters who are trying to "eat soup with a fork," as one sadly told me, and that thus while published researches are more numerous they are less thorough and have introduced many formulæ that neither prove nor agree, so that much work now accepted must be done over again and far more thoroughly; that even Liebig set a bad example in this respect, and that many new products, of which university chemists boast, are so inferior to those of nature as to be really adulteration.

What I have tried to illustrate mainly in the field of one science is more or less true under changed ways and degrees in the sphere of others. The sciences are also at the very heart of modern medical studies.

Biology explores the laws of life upon which not only these studies but human health, welfare and modern conceptions of man and his place in nature so fundamentally rest. The law of the specific energy of nerves, *e. g.* which Helmholtz says equals in importance the Newtonian law of gravity, and more than anything else made physiology the science which has had so large a share in raising the medical profession in Germany to a position in the intellectual world such as it never had before, doing for it in some degree what chemistry has done for dyeing, and even instruments like the ophthalmoscope, which almost created a department of medical practice, or the spectroscope, now indispensable in the Bessemer process, sugar refining, in wine and color-dye tests, the detection of photographic sensibilators, in the custom house and in two important forms of medical diagnosis,—all these, to cut short a long list of both epoch-making laws and important instruments, are the direct products of whole souled devotion to unremunerative scientific research.

It is hard for medical students to realize that they can not understand hygiene, forensic medicine, pharmacology and toxicology without a rigorous drill in chemistry ; that they must know physics to understand the diagnostic and therapeutic use of electricity, ophthalmology, otology, the mechanism of the bones, muscles, circulation, etc. ; that zoology is needed to teach sound philosophic thought, generic facts about the laws of life, health, reproduction and disease. These, and sometimes also sciences like mineralogy, anthropology, and psychology, are required in Europe, with much more rigor than is common with us, of every medical student. Thus doctors, like technologists, cannot know too much pure science. An emi-

nent medical practitioner in Europe compares young physicians who slight the basal sciences of their profession and pass on to the clinical, therapeutic and practical parts, to young men who grow prematurely old and sterile. The phrase of Hippocrates, "God-like is the physician who is also a philosopher," is still more true and good in its larger, more modern and looser translation, viz., exalted is the physician who knows not only the most approved methods of practice, but also the pure sciences which underlie and determine both the dignity and value of his profession.

Medical instruction on the one hand must select as its foundation those sciences and those parts of the sciences most useful in meeting man's great enemy, disease. It needs far more anatomy than physics and little mathematics, astronomy or geology. Technical instruction on the other hand is and must be so organized as to reflect the state of industry. It properly lays more stress upon chemistry with its many applications than upon biology, which has far fewer; more upon electricity than upon molecular physics; and more upon organic than inorganic chemistry. The university, which is entirely distinct from and higher than any form of technical or professional instruction can be, should represent the state of science *per se*. It should be strong in those fields where science is highly developed, and should pay less attention to other departments of knowledge which have not reached the scientific stage. It should be financially and morally able to disregard practical application as well as numbers of students. It should be a laboratory of the highest possible human development in those lines where educational values are the criterion of what is taught or not taught, and the increase of knowledge

and its diffusion among the few fit should be its ideal. As another puts it, "The more and better books, apparatus, collections and teachers, and the fewer but more promising students, the better the work." In Europe, besides its duty to science the university must not fail of its practical duty to furnish to the state good teachers, preachers, doctors, advocates, engineers and technologists of various kinds. Here a university can, if it chooses, do still better and devote itself exclusively to the pure sciences. These once understood, their applications are relatively easy and quickly learned. The university must thus stand above, subordinate and fructify the practical spirit, or the latter will languish for want of science to apply.

The important facts that are both certain and exact, and the completely verified laws, or well ordered, welded cohesion of thought that approach such mental continuity as makes firm, compactly woven intellectual or cerebral tissue, are so precious in our distracted and unsettled age, that it is no marvel that impartial laymen in all walks of life are coming to regard modern science in its pure high form as not only the greatest achievement of the race thus far, but also as carrying in it the greatest, though not yet well developed, culture power of the world, not only for knowledge but also for feeling and conduct. It is of this power that universities are the peculiar organs; to them is now committed the highest interests of man; from them and from science now comes the light and advancement of the world. They became and remained the asylums of free thought and conviction when Rome and all other privileged orders declined, and their germs were brought and piously and early planted on these shores by our fathers. The term is not only

“the noblest in the vocabulary of science,” but universities are the chief nurseries of talent, where is kept alive the holy fervor of investigation that in its passion for truth is fearless of consequences and has never been more truly and loftily ideal than now, when its objects of study are often most crassly material. It is their quality more than anything else that determines not only the status of the medical and all technological professions, but also whether the legal profession is formal, narrow, mercenary and unlearned as it seems now in danger of becoming, in Germany, because even the German universities, despite their great preëminence in all other respects, are by general consent of the most competent Germans themselves relatively weak in those departments which underlie the practice of law or broadly based on history and social or economic science, informed in administrative experience, and culminating in judicial talent and statesmanship. Universities largely determine whether a land is cursed by a factious, superstitious, half-cultured clergy, or blessed by ministers of divine truth, who understand and believe the doctrines they teach; who attract and enlarge the most learned, and penetrate the life of the poor and ignorant, quickening, comforting and informing in a way worthy the Great Teacher himself; and making their profession as it should be—the noblest of human callings.

Compared with our material progress, we are not only making no progress, but are falling behind in higher education. It has been estimated that but five per cent. of the practicing physicians of this country have had a liberal education, and that sixty per cent. of our medical schools require practically no preliminary training whatever for admission, while European laws

require a university training for every doctor before he can practice. Again, we apply science with great skill but create or advance it very little indeed. Should the supply of European science, which now so promptly finds its way here and fertilizes and stimulates to more or less hopeful reaction our best scholars, and upon which we live as upon charity, be cut off by some great war or otherwise, the unbalanced and short-sighted utilitarian tendencies now too prevalent here would tend toward the same stagnation and routine which similar tendencies unchecked long ago wrought out in China. We all most heartily believe in and respect technical and applied science and all grades of industrial education, but these are as much out of place in a truly academic university as money-changers were in the temple of the Most High.

But yet the fact that these and other evils and difficulties are now so widely seen and so deeply felt, that endowments for higher education seem now the order of the day, that the largest single endowment in this country has already so effectively begun so many reforms in scarcely more than a decade in Baltimore ; that churchmen, statesmen and business men now need only to see their own interests in a way a little larger and broader, as they are now tending to do, to co-operate more actively than they ever have done in strengthening our best foundations—such considerations sustain the larger and more hopeful view that our country is already beginning to rise above the respectable and complacent mediocrity still its curse in every domain of culture, and will show that democracy can produce—as it must or decline—the very highest type of men as its leaders. The university problem seems to be fairly upon us. We now need men in

our chairs whose minds have got into independent motion ; who are authorities and not echoes ; who have the high moral qualities of plain and simple living and self-sacrificing devotion to truth, and who show to this community and the country the spectacle of men absorbed in and living only for pure science and high scholarship, and are not mere place-holders or sterile routine pedagogues, and all needed material support is sure to come.

A word so characteristic here that it might stand upon our very seal, is concentration. Of this our founder, in declining to scatter his resources among the countless calls from individuals, institutions and causes, from excellent to vicious, and refusing us as yet, in the one work he has set out to accomplish, no needed thing, sets an example. We have selected a small but closely related group of five departments, and shall at first focus all our means and care to make these five the best possible. Neither the historical origin nor the term university have anything to do with completeness of the field of knowledge. The word originally designated simply a corporation with peculiar privileges and peculiarly independent to do what it chose. We choose to assert the same privilege of election for ourselves that other institutions allow their students, and offer the latter in choosing their subjects a larger option between institutions. The continental habit of inter-university migration also on the part of students, if once adopted here, would, no doubt, stimulate institutions no less than it has stimulated competing departments in the same university. Our plan in this respect implies a specialization as imperatively

needed for the advanced students, as it would we admit, be unfortunate for students still in the disciplinary collegiate stage. If our elementary schools are inferior to the best in Europe, and if our fitting schools are behind the French Lycee, the German Gymnasium and the great English schools it is our universities that are comparatively by far the weakest part of our national system. The best of these best know that 50 or 100 instructors cannot do the work of 350; that they cannot hope at present to rival European governments which erect single university buildings, costing nearly four million dollars each, as at Berlin and Vienna, nor equal the clinical opportunities of large European cities with poorer populations and more concentrated hospital systems. Our strongest universities are far too feeble to do justice to all the departments, old and new, which they undertake. Our institutions are also too uniform; the small and weak ones try to copy every new departure of the stronger ones as the latter copy the far stronger institutions in Europe. If the best of them would do work of real university grade, they should specialize among the fields of academic culture, doing well what they do, but not attempting to do everything, the American system might yet come to represent the highest educational needs of the country. In contrast with the present ideal of horizontal expansion and the waste of unnecessary duplication, we believe our departure will be as useful as it is new.

Again, concentration is now the master word of education. In no country has the amount of individual information been so great, the range of intelligence so wide, the number of studies attempted by young men

in colleges and universities so large for the time and labor given to each, the plea for liberal and general, as distinct from special and exclusive studies, been so strong. This is well, for general knowledge is the best soil for any kind of eminence or culture to spring from, and because power, though best applied on a small surface, is best developed over a large one and not in brains educated, as it were, in spots. More than this, our utilitarian ideal of general knowledge is far more akin to that of Hippias, who would make his own clothes and shoes, cook his own food, etc., or to that of Diderot, who would learn all trades, than to the noble Greek ideal of the symmetrical all-sided development of all the powers of body and mind. The more general knowledge the better; but everything must shoot together in the brain. In the figure of Ritchen, the sulphur, saltpeter, and charcoal must find each other or the man makes no powder. The brain must be trained to bring all that is in it to a sharp focus without dispersive fringes. The natural instinct of every ambitious youth is to excel, to do, or make or know something better than any one else, to be an authority, to surpass all others, if only in the most accumulated specialty. Learning thus what true mental freedom is, he is more docile in all other directions.

If it be extravagant to say that no minds are so feeble that they cannot excel, if they concentrate all their energies upon a point sufficiently small, nothing is more true than that the greatest powers fail if too much is attempted. This is not only a wise instinct that makes for economy, but in the parliamentary committee rooms, in corporation meetings, in the court room, in business, in science, in the sick chamber, the modern world in nearly every department is now

really governed by experts—by men who have attained the mastery that comes by concentration. The young man who has had the invaluable training of abandoning himself to a long experimental research upon some very special but happily chosen point was typically illustrated in a man I knew. With the dignity and sense of finality of the American senior year quick within him, his first teacher in Germany told him to study experimentally one of the score of muscles of a frog's leg. He feared loss and limitation in trying to focus all his energies upon so small and insignificant an object. The mild dissipation of too general culture, the love of freedom and frequent change, aided by a taste for breezy philosophic romancing, almost diverted him from the frog's leg. But as he progressed he found that he must know in a more minute and practical way than before—in a way that made previous knowledge seem unreal—certain definite points in electricity, chemistry, mechanics, physiology, etc., and bring them to bear in fruitful relation to each other. As the experiments proceeded through the winter, the history of previous views upon the subject were studied and understood as never before and broader biological relations gradually seen. The summer, and yet another year were passed upon this tiny muscle, for he had seen that its laws and structure are fundamentally the same in frogs and men, that just such contractile tissue has done all the work man has accomplished in the world, that muscles are the only organ of the will. Thus, as the work went on, many of the mysteries of the universe seemed to centre in his theme ; in fact, in the presence and study of this

minute object of nature he had passed from the attitude of Peter Bell, of whom the poet says,

“A cowslip by the river’s brim
A yellow cowslip was to him,
And it was nothing more,”

up to the standpoint of the seer who “plucked a flower from the crannied wall,” and realized that could he but understand what it was, “———root and all and all in all, he would know what God and man is.” Even if my friend had contributed nothing in the shape of discovery to the great temple of science, he had felt the *omne tutit punctum* of nature’s organic unity, he had felt the profound and religious conviction that the world is lawful to the core ; he had experienced what a truly liberal education, in the modern as distinct from the mediæval sense, really is. We may term it non-professional specialization.

Perhaps the most thorough and comprehensive government reports ever made in any language are those of the English parliamentary commissioners on endowments. The first of these occupied nearly nineteen years and fills nearly two-score heavy folio volumes. In all, about twenty thousand foundations, new and centuries old, large and small, devoted to a vast variety of uses, good and questionable, were reported. The conclusions drawn from this field of experience, which is far richer and wider in England than elsewhere, was that of all the great popular charities, higher education has proven safest, wisest and best, and that for two chief reasons—first, because the superior integrity and ability of the guardians who consented to administer such funds, the intelligence and grateful appreciation of those aided by them, and

the strong public interest and resulting publicity—all three combined to hold them perpetually truest to the purpose and spirit of the founders ; and secondly, because in improving higher education, all other good causes are most effectively aided. The church can in no other way be more fundamentally served than by providing a still better training for her ministers and missionaries. Charity for hospitals and almshouses is holy, Christ-like work, but to provide a better training for physicians and economists, teaches the world to see and shun the causes of sickness and poverty. Sympathy must always tenderly help the feeblest and even the defective classes, but to help the strongest in the struggle for existence, is to help not them alone, but all others within their influence.

Of all the many ways of supporting the higher education, individual aid to deserving and meritorious students is one of the most approved. In the University of Leipzic, e. g., four hundred and seven distinct funds can aid eight hundred and forty-nine students. Of these funds the oldest was established in 1325, and they are increasing in number, more new ones having been given between 1880 and 1885 than in any entire decade before. In size they range from thirty-five thousand to fifty dollars, in Berlin from one hundred and forty thousand to one of less than forty dollars. In cases where conditions are specified the most frequent limitation is to students from a certain locality and next to those of a certain family. By the older founders students of theology were more often preferred, but the more recent funds are for medicine, law, philology and pure science, and a fund of over two hundred thousand lately given the University of Marburg is for advanced students in those sciences which un-

derlie medicine. These funds are often given, named for, held and sometimes awarded by churches or their pastors, magistrates, heads of fitting schools, boards of education, representatives of prominent families, for students of their name, the donor himself or herself, individual professors, etc., subject of course to satisfying the university examiners. Many are tenable for one, more for three, and some for five and six years. The funds must be invested with pupillary security, and with interest commonly less than four per cent. In Cambridge and Oxford provision is made for nearly 1,000 fellows and eight hundred scholars, not to mention the exhibitions at Oxford. The fellowships are more lucrative and are designed for more advanced men than are provided for in the German universities, the fellows aiding the master in internal administration. In England, besides the religious and other founders, as in Germany, the great historic industrial and mercantile corporations provide many of the fellowships and scholarships, particularly those of the sixteenth and seventeenth centuries, and they are granted by bishops, curates, heads of business corporations, masters of the great schools, heads or fellows of colleges. In France, where these foundations were swept away by the revolution, stipends and bursaries are provided annually by the Government. New appropriations for the most advanced students of all was the secret of the remarkable *Ecole Pratique des Hautes Etudes*, founded in 1868, of which a recent report just printed for the Exposition says, condensing its substance, that its purpose has always been to foster scientific zeal with no shade of temporal interest, that it restored the almost obliterated idea of higher education, gave unity to scientific interests throughout France, and

made her feel the scholarly desiderata of the age, made young professors not only well instructed, but trained in good methods, that although its profound researches are not manifest to the public, has given a more scientific character to all the faculties, and rendered a service to the state out of all proportion to its cost. In France individuals co-operate with the state in this work.

Has there ever been devised a form of memorial to and bearing the names of husbands, wives, children or parents, by which even the smallest funds could be bestowed in a way more lastingly expressive of the individuality, spirit and the special lines of interest of the donor, more worthy the dead and more helpful to the highest ends of life? Since the first endowment of research in the Athenian Porch and Grove, thousands and thousands of donations of this sort have borne tangible witness to the sentiment so often and vividly taught by Plato that in all the world there is no object more worthy of reverence, love and service than eugenic, eupeptic, well-bred, gifted young men, for in them is the hope of the world.

The more advanced our standards are to be, the fewer will be our students, and the more expensive their needed outfit of books and apparatus. If we divide our running expenses only by the number of students our present fellowships and scholarships allow us to receive out of our two hundred and fifty applicants, the amount we spent per student, the first year, will probably be without a parallel. Besides this, for a number of students with important researches on hand we are expending hundreds of dollars each for their individual needs, and should be glad to do so for more as good men. The best students very often graduate

with empty pockets, but with their zeal and power at its best, and when an extra year or two would make a great difference in their entire career. Also, as the field of knowledge grows more complex, the economy of energy needed for concentration is impossible without the leisure secured by comfortable support.

Connected with all the protection, exemptions and privileges so dearly prized and tenaciously clung to by the mediæval universities, there have always been dangers sometimes grave and not yet entirely obviated. The new charity is often popularly called a science as well as a virtue. Its axiom is that no man has a right to give doles to beggars without satisfying himself personally or through some agency to that end that his gift will do good and not harm to the recipient. History, and I may add personal observation, shows that the same general law holds true to some extent in universities. I believe they should not award fellowships to men fresh from college (save in the very rarest cases), unless they are able to guide and direct as well as to follow their work in every detail. A fellow should be encouraged and stimulated by a daily and familiar intercourse with the professors. His methods, reading and researches should be kept at their best and the entire resources of the institution should be a soil for his most rapid and helpful growth. Students thus served, even if their gratitude does not prompt them, as in some late instances in Germany, to study, revive and try to conform with piety to the ideal of ancient and almost forgotten donors, whose provisions they enjoyed, will not be lacking in appreciation. To appoint a man to use such funds in electing among undergraduate courses, or to take his chances among the confusing multifarious subjects offered in

foreign institutions is, I believe, in most cases of small utility, and in some cases that I know, positively harmful. May the methods of exclusion we are studying be so effective that neither our precious funds nor the precious energy of our instructors be wasted upon the idle, stupid or unworthy students, now too often exposed in vain for four years to the contagion of knowledge.

"Education used to be a question for ladies and for schoolmasters," said a French statesman last spring, but it is now not only a question of state on which the support of all great institutions depends, but the great question into which all others issue if profoundly discussed or studied. So greatly do republics need the whole power of education, and so serious is their struggle for existence against ignorance and its attendant evils, that it has well been said that the problem whether this form of government be permanent is at bottom a question of education. But monarchies are no less dependent upon the education of their leaders and servants. In his famous address declaring that if Germany was ever to be free and strong, it must be by becoming the chief educational state of Europe, must realize the platonic republic in which the education of its youth was the highest care of the rulers, Fichte laid down the policy which has been one of the chief causes of the wonderful development of that country. Moreover, evolution, which shows that even life itself is but the education of protoplasm, cells and tissues, that the play-instinct in children and the love of culture in adults, not only measure the superfluous individual energy over and above that required by the processes necessary to life, but are perhaps largely the same, also makes it plain that the hunger for more and larger

education of life is but the struggle of talent to the full maturity and leadership which is its right.

For myself I have no stronger wish or resolve than that in the peculiarly arduous labors I expect, I may never forget that this institution should be a means to these high purposes and not degenerate to an end in itself: and may it be as true of our graduates to remotest time, as it is of us in a unique way and degree to-day, that we could not love Clark University so much, loved we not science and education more.

SENATOR GEORGE F. HOAR then made the following address :

An occasion so interesting as the opening of a university ought not to pass by without some word of public gratitude for the munificence that has founded it, some utterance of gratulation and good cheer for him who takes up the heavy burden of its administration, and some statements of the beliefs, hopes and conditions, under which this community welcomes it, and is willing to adopt it among its governing forces, to hold out a reasonable assurance of its support. When the purpose of Mr. Clark was first announced there were many people who thought it would have been better to enlarge the resources of some existing college. But, as his plans have gradually unfolded, such critics have become satisfied, not only that this university can do its work without jar or friction with any other, but that the time has come when a work should be done in this country which it may not be wholly convenient for any other just now to undertake.

It would be hard to state too strongly the title to public gratitude of a man who, after a life of extraordinary success in great business transactions, devotes the large fruits of that success to the benefit of his fellow men, even if that were all. Such benefactions, though hardly ever on so large a scale, are not unusual in this country. They seem in our day to be the congenial product of the American spirit.

Καὶ οἷδε μὲν προσηκόντως τῇ πόλει τοιοῦτε ἐγένοντο.

But certainly of all gifts for public objects there is none so delightful to contemplate as the foundation of a college. With rare exceptions it is the safest and surest of all endowments. There may have been a few obscure cases where an endowed institution of learning has perished from the loss of its funds. But they are almost unknown. These places become the hallowed spots in the eyes of nations, like the scenes of famous battles, or the places where the foundations of great states have been laid, or where great civic scenes have occurred, or the dwelling places or burial places of heroes or statesmen. Pilgrims from afar visit them. Foreign war spares them. They survive all changes of constitution or dynasty. International law throws its protection about them. In the bloodiest and angriest civil strifes men

“Lift not their spears against the Muses’ bower.”

Their pupils, scattered over the country, retain an attachment for them and for each other, which is to the college like a coat of chain armor, and which is one of the strongest bonds of the national life itself.

It is curious to see the dates of the endowment of the ten great schools of England; Eton, 1440; Winchester, 1380; Westminster, 1560; St. Paul’s,

1500 ; Merchants Taylors', 1560 ; Charter House, 1611 ; Harrow, 1571 ; Rugby, 1567 ; Shrewsbury, 1549 ; Christ's, 1552. At Winchester, William of Wykeham, founded in 1380, a school which still stands, and has remained through six dynasties. Hanover, Stuart, Tudor, York, Lancaster, Plantagenet, have successfully struggled for and occupied the English throne, while in the building which Wykeham in his lifetime planned and built, the scholars of Winchester are still governed by the statutes which he framed. The origin of Oxford and Cambridge, as of many of the universities of the continent, is lost in the darkness of antiquity.

But I find an especial sublimity in the purpose of the founder which gives this institution its distinctive peculiarity, certainly among American institutions of learning. It seems to me very remarkable that a man whose own training and life, whose own disciplines and successes have been among what are called practical affairs, who in early life had so well known the need of the strict economies in which our fathers in New England brought up their children, should have conceived the plan of endowing an institution where the study of science for its own sake, as an end, and not as an instrument, should be the leading object ; that he should have called into its service eminent scholars whose chief occupation is to be research rather than teaching ; and should have understood so perfectly that while waste and extravagance in the smallest things are not only wrong but criminal, the costliest man or equipment is often the cheapest, so the highest excellence cannot otherwise be attained.

Those of us who have had any part in the organization of this undertaking well know that the man who founded it is still the wisest of its administrators. This

whole people will join with them in the prayer that his life may be long spared to witness the growth of the tree he has planted, and to enjoy the gratitude of the youth whose lives he has blessed. As God denied children to Washington that his country might call him father, so, to our founder shall, through remotest time, uncounted generations educated by his bounty, stand in the place of posterity.

Some questions or doubts have arisen in friendliest quarters whether we may not find elements of weakness in certain portions of our design. It is said that the strength of the American university is its alumni ; that no endowment, however ample in the beginning, will be enough to meet the new demands and great cost of scientific education, or the emulations which must, sooner or later, arise, without large and constant addition from the affection and gratitude of the graduates ; and that, under our system of devotion by specialists to a few special pursuits, neither class feeling, which is born of community of studies, nor warmth of attachment to the university as the alma mater who has opened the eyes of the child to all knowledge and beauty and truth, is likely to grow up.

It is said that our scheme does not include moral or religious nurture, without which the chief end and purpose of all education fail.

It is doubted, also, whether, after all, science has any other proper function then that of the hand maiden of human life ; whether the need of this country be not still so great, both in the development of her vast resources, and in the competition of her industries with those of other countries, of all the aid which science can lend her, that it is almost wasteful to use either the

brains of her students or the resources of her capital, for any other object.

These questions experience alone can finally answer ; but we may perhaps say a word about them without presumption.

There is no doubt that the relation of classmates to each other has been a source of strength to our American colleges. Youths of the same age grow up together and pursue together the same prescribed studies. They look back in after life on the same memories and experience of the golden days of boyhood. But that state of things is already changing. The elective system and the increasing size of the classes have already gone far to do it away. It is now almost unknown in England. We hope to find an ample substitute for it in the close and constant personal relation between instructor and pupil. If we are able to bring here great and shining lights of science, who shall conduct their pupils along the attractive paths of an original research, which they are to share and partake with each other, we have no fear that our youth will fail in gratitude and affection. The heart of no pupil of Agassiz is likely to grow cold toward the spot hallowed by the master's lessons. The thick warbled note of the Attic bird never failed to bring back the olive groves of Academe to the loving memory of the disciple of Plato.

Let no man think that this university is to be indifferent to the moral or religious character of her children. She will signally fail in the judgment of those who expect most from her, if the truths to be revealed to those who study here shall fail to beget a spirit of child-like reverence in the presence of the Author of all truth, or if "by the unlocking of the gates of sense,

and the kindling of a greater natural light, anything of incredulity or intellectual night shall grow up in their minds toward divine mysteries."

We do not exalt science above faith, or intellectual attainment above moral character. The child that has learned to govern its will by the golden rule, though it can scarce count its fingers, is higher in the scale of being than the astronomer who has not learned that lesson, though he know all Kepler's laws and have catalogued the stars. Our pupils will come here, mature in years, with characters largely formed. They will devote themselves to, and be absorbed by, the pursuit of truth. They will have for guides, companions, and masters men who will themselves be an example and an inspiration to all moral excellence. There is little danger that the tares will get into the measures that are already filled with wheat.

Speaking now for myself alone, I have little sympathy with that arrogant and disdainful spirit with which some men who undertake, with little title, to represent science in this country, sneer at any attempt to make use of the forces she reveals to us for the service of mankind. Some one said, the other day, that science was becoming a hod-carrier. I do not see why the term "hod-carrier" should express the relation rather than the term "benefactress." I do not see, either, that there is anything degrading in the thought that the knowledge of the learned man enables him to lift the burden, beneath which humanity is bowed and bent. I do not know that science is exempt from the divine law, "He that is greatest among you, let him be the servant of all." If the great forces of the universe perform all useful offices for man, if the sunshine warm and light our dwellings,

if gravitation move the world and keep it true to its hour, nay, if it keep the temple or cathedral in its place when the hod-carrier has builded it, I do not see why it should not lend its beneficent aid to him also. Our illustrious philosopher advised his countryman to "hitch his wagon to a star." The star will move no less serenely on its sublime pathway when the wagon is hitched to it. I do not know that any archangel or goddess, however resplendent the wings, has yet been constructed or imagined without feet. I do not know that any archangel, however glorious, has ever been created or imagined without sympathy for suffering humanity,

I look for great advantage to the country, both in wealth and power and in the comfort and moral improvement of the people by the application of science to the useful arts.

But all this is very different from the hireling spirit, which loses all interest in the revelations of divine wisdom, but for the riches she displays in her left hand; all this is very different from requiring of the investigator anything but the search for absolute truth. Agassiz, who had no time to make money, and who knew the rich treasures of the Calumet and Hecla mine, without caring to take advantage of them; Henry, who knew the powers of magnetism years before Morse came with his harness for the steed, are still our best examples of the servant and teacher of science.

So may this university of ours, modestly, yet hopefully, take its place in that lofty company. It will be a base thing if we let it fail. Massachusetts in her poverty and weakness created the common school and the college. She will disdain to fall behind other

countries in the higher education which the new centuries require.

General Devens then called upon REV. EDWARD EVERETT HALE for remarks.

DR. HALE, spoke briefly of the honor and privilege it was to speak here. But a short time ago he was present at the quarter millennium anniversary of his college, and he wished he might be present at the similar occasion in the history of this university. But in place of this, people could look back among the files of the papers and find his name with those who spoke at the dedication. He wished he could have foreseen the establishment of such an institution, but he had not, though he could say that America was doing wonderfully well for the Americans. It was in the education of *men* that there was a lack of facilities, especially in the education of those just out of college. The progress of an education should not be broken short when a man has just found out what he wants; when he has discovered what chemistry is, what the study of physics implies, and so on. For this purpose, it was that Clark University has been organized. He said that he had been to many university commencements, but never before had he been present at the commencement of a university. The country does not know yet the meaning of the word university. Some think of the city of Paris as a place where one goes to spend money for the opera, or where, if they were lucky, they might see a revolution. But its great university is the greatest thing in Paris. We go into our so-called universities and find

professors explaining to the boys the difference between the masculine and feminine genders. In the Paris University the professors lecture to their equals ; in America it ought to be the same. He said that he was indebted to the audience for their kindness in listening to him, and it was always a pleasure to talk to a Worcester audience. He felt that America ought to be able to teach Americans everything. It was true though that men like Agassiz were Swiss and had taught Americans, but he hoped that Clark University might turn out many like him, who should give heart and soul to the work of science.

U. S. Minister JOHN D. WASHBURN, spoke as follows :

He thought it was worth while to come four thousand miles to mingle his hopes and aspirations with those of his associates. If it were merely to express his personal sympathy, he would assume that his presence would be an assurance of that, but for the moment he held something more than a personal relation to the occasion. He did not assume to criticise past methods or any of the systems of other institutions of the present day. In this departure removing themselves in the first instance from rivalry with any, conciliating the good will of all, he knew, whatever the doubter or superficial critic may say, he knew and testified before them that they had the sympathy and God-speed of some of the highest institutions of learning in the Old World and many of its noblest apostles in every enlightened country of Europe. He believed that at this stage in the world's

development the plan here adopted was the wisest, perhaps the only one, on which an institution of advanced learning could be framed and placed at once in the position of doing the greatest possible amount of good. The time is approaching in our country when learning will be cherished for its own sake, not merely nor mainly for the purpose of early entrance on the harvest of pecuniary return, but because it is recognized as one of the highest aims and privileges in human life to help knowledge grow to more and more. The hour has come, in the fullness of time, when the practical may, without abandoning its own ground, freely and generously make room for the ideal by its side. Of all the high qualities essential to the administration of an institution, the highest and most important is that of intellectual courage. Faithful to ourselves, and to the noble founder, who this day enters on those higher than earthly rewards, faithful to the trust we have accepted and to the community whose confidence we enjoy, and for whom we hold this great blessing in trust, faithful in all things and fearless as faithful we shall not fail.

The exercises closed with the benediction pronounced by the REV. DR. MERRIMAN.

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